AMENDMENTS TO THE DRAWINGS

The attached sheet(s) of drawings includes changes to Figure 3 to more clearly articulate aspects of the invention.

Attachment: Replacement sheet

REMARKS

The present amendment is intended to be fully responsive to the Office Action having a mailing date of October 4, 2004 wherein claims 1-24 have been rejected and are currently pending. In response to an objection under 37 C.F.R. 1.121(d), a replacement drawing is attached hereto for more clearly articulating aspects of the invention. New dependent claims 25-31 have been added to more clearly articulate aspects of the invention. Applicant submits that no new matter has been added by this amendment and that support for the new claims may be found in the specification as filed, for example, at page 6, lines 3-5; page 7, lines 7-10; and Figure 2.

Claim Rejections Under 35 U.S.C. § 103

Rejection Using *Sand*

Claims 1-4, 8-15, and 20-24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Sand*, U.S. Patent No. 6,512,746. For at least the following reasons, applicant respectfully traverses.

Sand does not disclose the necessary teaching or suggestion for one having ordinary skill in the art to produce a passive system and method for measuring the subjective quality of real time media streams in a packet-switching network as according to claims 1-24.

Sand teaches a method and apparatus for measuring voice grade of service in an Internet Protocol (IP) network for assessing transmission quality. The method for measuring involves steps for connecting of an IP telephonic measurement apparatus to a far-end IP interface point for collecting objective parameters relative to network performance. The collected objective parameters are used to evaluate the subjective performance of telephonic networks by computing voice grade performance parameters including speech level and noise. The method also includes the step of connecting an IP telephonic measurement apparatus to a near-end interface point of the telephonic network to collect objective parameters relative to network performance. The parameters collected from the near-end IP interface point are used to compute voice grade performance parameters including echo, echo path delay, and loss. Thereafter, the computed voice grade performance parameters are used to calculate percentage-

good-or-better (%GOB) scores relative to voice grade of service (VOS) performance. (col. 5, line 54-col. 6, line 33)

Claim 1 of the present application describes a method for determining the subjective quality of a packetized media data stream having packets of encoded data wherein the packets include a header portion and a data portion each having content. The method includes the steps of copying a portion of the packetized media data stream to obtain copied packets; replacing the content of the data portion of the copied packets with a packetized known test signal to construct a pseudo-media stream; determining subjective quality of the pseudo-media stream; and using the subjective quality of the pseudo-media stream to determine subjective quality of the packetized data stream.

On page 4, lines 1-4 of the Office Action, it is conceded that *Sand* does not explicitly disclose copying a portion of the packetized media data stream to obtain copied packets as according to claim 1. However, it is asserted that *Sand* does disclose collection of IP voice datagrams used to create a calibration file in view of *Sand* column 7, lines 2-15. It is further asserted that the action of creating and storing the calibration file is the functional equivalent of copying data because it has been stored in memory. (Col. 4, lines 4-8) Applicant respectfully disagrees.

As clearly stated in column 7, lines 2-15 of *Sand*, a calibration file is created by inputting a known speech source signal into a known good IP telephonic terminal apparatus. A speech source signal is output from the known good IP telephonic terminal apparatus and is saved as a calibration file. The calibration file is used to calibrate an IP telephonic measurement apparatus that is subsequently used to evaluate the performance of the telephonic network as described above. The known speech source signals used to create the calibration file are predetermined speech samples specified by an ANSI standard. Therefore, the speech signals are not collected from a packetized media data stream as according to claim 1, but are pre-packaged speech signals used for the purpose of creating the calibration file that is subsequently used to calibrate an IP telephony measurement apparatus. Further, *Sand* teaches utilizing the calibrated IP telephony measurement apparatus to evaluate the performance of the telephony network by measuring objective parameters, e.g. packet loss, delay, jitter, associated with the packetized

data stream that has traversed the network. These objective parameters are subsequently analyzed to calculate subjective quality parameters.

On page 3, lines 15-23 of the Office Action, it is asserted that *Sand* discloses replacing the content of the data portion of the copied packets with a packetized known test signal (Column 7, lines 35-37) to create a pseudo-media stream for measuring the voice grade of service of the telephonic network. (Column 7, lines 35-37; column 5, lines 55-column 6, lines 1-31 of *Sand*) Applicant respectfully disagrees.

Column 7, lines 35-37 of *Sand* describes inputting the IP datagram calibration files through steps 1-10 of the method for measuring voice grade of service of a telephonic network as described in column 5, lines 55-column 6, lines 1-31. More particularly, Column 7, lines 35-37 describes a second step of a method used to calibrate an IP telephony measurement apparatus. Column 7, lines 35-37 suggests nothing relative to replacing the content of copied data packets with a packetized known test signal as according to claim 1. As taught by *Sand*, the IP datagram calibration files are created using a known good IP telephony terminal apparatus and a prefabricated speech source signal of a known grade of service. The speech source signal is passed through the terminal apparatus to create the calibration file. Hence, the calibration files are essentially a known test signal that has been passed through a known good terminal apparatus. There is nothing in *Sand* that suggests that calibration files are created by replacing the content of copied data packets as according to claim 1.

As best understood from page 3, lines 18-22 of the Office Action, it is asserted that 'since the above described calibration files are being sent to the same endpoint as the intended destination, creating these calibration files and sending them through the telephonic network is functionally equivalent to replacing the data of incoming packets ...'. This assertion suggests that *Sand's* method used to calibrate an IP telephony measurement apparatus is equivalent to Applicant's copying of a portion of a packetized data stream and replacing the content of the data portion of the copied packets, wherein each packet includes a data portion and a header portion, with a known test signal to form a pseudo media stream. Clearly, these two processes are unrelated and completely different. There is nothing in either one of the processes that suggests anything about the other. *Sand* teaches a method of evaluating the performance of a

telephony network by positioning an IP telephony measurement apparatus, that has been properly calibrated, proximate both of the near and far ends of the telephony network. The IP telephony measurement apparatus collects data samples, including objective quality parameters such as jitter and delay, from the data streams being transmitted over the network and calculates a network performance score using the collected data. (See Column 5, line 55 – Column 6, line34). Therefore, *Sand* does not teach forming a pseudo-media stream from a portion of a packetized data stream and using the pseudo-media stream to determine the subjective quality of the packetized data stream as according to claim 1.

Claim 1 describes a method for determining the subjective quality of a packetized data stream having packets of encoded data that includes the steps of copying a portion of a packetized media data stream to obtain copied packets and replacing the content of the data portion of the copied packets with a packetized known test signal to form a pseudo-media stream. The pseudo-media stream formed by these steps is *not input back into the IP telephonic network* for the purpose of determining network performance as asserted in the Office Action and taught by *Sand*. The *pseudo-media stream* formed by copying a portion of the packetized media data stream being transmitted through the telephonic network is *input into a quality measurement comparator* that determines the subjective quality of the pseudo packets and outputs a quality measurement by comparing the decoded and depacketized pseudo-media stream to the known test signal before it was inserted into the copied packets. (Page 5, line 15-page 6, line 5; Claims 25-29)

Sand teaches a method for determining end-to-end IP telephony network quality by using IP telephony measurement devices to collect data from the network after it has been transmitted between endpoints and subsequently calculates voice grade performance parameters using objective parameters derived from the collected data. Accordingly, one having ordinary skill in the art would not have been motivated by the teachings of *Sand* to produce the method for determining the subjective quality of a packetized media data stream as according to claim 1. All other independent claims, namely, 3, 8, 9, 14, 16 and 20 include similar limitations as those found in claim 1 which are not taught or suggested by *Sand*. For at least these reasons, the indicated claims are patentable as well as their respective dependent claims at least for reasons based on their respective dependencies from allowable base claims.

Further, Applicant submits that notwithstanding the foregoing reasons for patentability of the dependent claims because of their dependence from allowable independent claims, the dependent claims are also independently patentable with regard to this rejection using *Sand*. For example, claim 5, which is dependent from independent claim 3, describes additional method steps for determining the subjective quality of a packetized data stream. Particularly, claim 5 includes the step of separating the copied packetized data stream by source using a source identifier portion of each copied packet. *Sand* does not disclose or teach separating the data collected from the packetized data stream by using the source identifier portion of each collected packet. *Sand* discloses using the header information to smooth out delay variation in the speech samples but does not disclose separating the data collected from the data stream by using the header information. Accordingly, it is respectfully submitted that at least claim 5 is independently patentable..

In view of the above, it is respectfully requested that this rejection be withdrawn and the claims allowed.

Rejection Using *Sand* In View Of *Steagall et al.* (U.S. Patent No. 5,127,001)

Claims 5-8 and 16-19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Sand* in view of *Steagall et al.* (U.S. Patent No. 5,127,001). Applicant respectfully traverses.

Steagall teaches a conference call arrangement for distributed networks that simplifies the summing of voice packet signals by establishing a time base corresponding to the approximate time interval of data in a voice packet to simplify summing of a single voice packet from each of the other stations connected to the conference. The packets are summed for each time based interval to avoid the need for synchronous operation or realignment of the voice packets from each station connected to the conference call, and to reduce the complexity of echo suppression at each local station. (Column 3, line 58-column 4, line 1.)

It is asserted in the Office Action that *Stegall et al.* cures the deficiency of *Sand* relative to separating the copied packetized data stream by source using the source identifier portion of each copied packet. However, *Steagall et al.* does not cure the deficiencies of *Sand*

with regard to teaching or suggesting a method for determining the subjective quality of a packetized media data stream having encoded data that includes the steps of copying a portion of the packetized data stream to obtain copied packets, emptying the data content of the data portion of each copied packet, loading a known test signal into each emptied packet to form a pseudo-media signal, and determining the subjective quality of the pseudo-media signal. To sustain an obviousness rejection, the prior art references, when combined, must teach or suggest all of the claimed limitations which they fail to do.

At page 17, lines 13-14 of the Office Action, it is asserted that *Sand* discloses a collection of IP voice datagrams used to create a calibration file (Col. 7, lines 2-15). Applicant respectfully disagrees.

The calibration files are created using a known good IP telephony terminal apparatus and pre-packaged off-the-shelf speech source signals of a known grade of service. The speech source signals are passed through the terminal apparatus to create the calibration files. There is no disclosure of IP datagrams being collected from a packetized data stream being transmitted over a telephony network to create the calibration files. Disclosure can not be read into a reference for the purpose of supporting a claim rejection. Further, *Steagall et al.* does not cure the deficiencies of *Sand* with regard to teaching or suggesting a method for determining the subjective quality of a packetized media data stream having encoded data that includes the steps of copying a portion of the packetized data stream to obtain copied packets, emptying the data content of the data portion of each copied packet, loading a known test signal into each emptied packet to form a pseudo-media signal, and determining the subjective quality of the pseudo-media signal.

Neither *Sand* or *Steagall et al.*, standing alone or in combination, teach or disclose a method for determining the subjective quality of a packetized media data stream having packets of encoded data that includes the steps of copying a portion of the packetized media data stream to obtain copied packets and replacing the content of the data portion of the copied packets with the packetized known test signal to form a pseudo-media stream. Applicant reiterates the foregoing remarks made above with regard to the claimed invention not being taught or

suggested by the *Sand* reference and respectfully requests that this rejection be withdrawn for at least these reasons.

On page 19, lines 4-7 of the Office Action, it is conceded that *Sand* does not disclose a first device for copying a portion of the packetized data stream but that it does disclose collection of IP voice datagrams used to create the calibration files. Applicant respectfully traverses.

As described above, the calibration files are created using a known good IP telephony terminal apparatus and pre-packaged off-the-shelf speech source signals of a known grade of service. There is no disclosure in *Sand* of IP datagrams being collected from a packetized data stream being transmitted over a telephony network to create the calibration files. Further, Sand does not disclose a third device that replaces the information content of each copied packet with a known test signal to create a pseudo-media stream. Col. 7 lines 35-37 of *Sand* describes inputting the IP datagram calibration files through steps 1-10 of the method for measuring voice grade of service of a telephonic network as described in column 5, lines 55-column 6, lines 1-31. More particularly, Column 7, lines 35-37 describes a second step of a method used to calibrate an IP telephony measurement apparatus.

Further, *Steagall et al.* does not cure the deficiencies of *Sand.* Neither *Sand* nor *Steagall et al.* suggests an apparatus for determining the subjective quality of a packetized media data stream having encoded data that includes a device for copying a portion of the packetized data stream and a device for replacing the information content of each copied packet with a known test signal to create a pseudo-media signal. It is appreciated that each copied data packet includes a header portion (source portion) and a data portion (information portion). As according to the claimed invention, the data portion of each copied packet is replaced with a known test signal to form a pseudo-media signal. Neither *Sand* nor *Steagall et al.* disclose or suggest a device to accomplishing this task. To sustain an obviousness rejection the combined references must teach every element of the claimed invention. Features of the claimed invention can not be read into the references for the purpose of forming the basis for a rejection. Applicant submits that the claims herein are patentable as well as their respective dependent claims.

For at least the above reasons, Applicant respectfully requests that this rejection be withdrawn and the claims allowed.

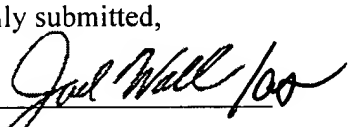
CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 07-2347, under Order No. 00-3008 from which the undersigned is authorized to draw. . To the extent necessary, a petition for extension of time under 37 C.F.R. § 1.136 is hereby made, the fee for which should be charge to this deposit account number..

Dated: January 4, 2005

Respectfully submitted,

By 

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Attachments